

UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY
FEDERAL ENERGY REGULATORY COMMISSION

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| IN THE MATTER OF |) | |
| |) | |
| Rio Grande LNG, LLC |) | Docket No. CP16-454-003 |
| |) | CP16-454-000 |
| Rio Bravo Pipeline Company, LLC |) | CP16-455-000 |
| |) | CP16-455-002 |
| |) | CP20-481-000 |

Request for Rehearing of Vecinos para el Bienestar de la Comunidad Costera, Sierra Club,

City of Port Isabel, and the Carrizo/Comecrudo Tribe of Texas

Vecinos para el Beienestar de la Comunidad Costera, Sierra Club, City of Port Isabel, and the Carrizo/Comecrudo Tribe of Texas request rehearing of *Rio Grande LNG, LLC*, Order on Remand and Amending Section 7 Certificate, 183 FERC ¶ 61,046, Dkt. Nos. CP16-454 *etc.* (Apr. 21, 2023).

This order purports to respond to the remand issued in *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321 (D.C. Cir. 2021) (*Vecinos*). *Vecinos* found, *inter alia*, that FERC had violated the National Environmental Policy Act (NEPA). In every other case the undersigned are aware of—including FERC’s handling of prior remands—after a court found an agency found to have violated NEPA, the agency responded by publishing new a NEPA analysis. But astonishingly, FERC has refused to do so here. This procedural shortcut itself renders FERC’s inaction invalid. Moreover, the information FERC does provide is incomplete, and demonstrates that rather than exercise its independent judgment, FERC has simply uncritically accepted the representations of the industry FERC is supposed to regulate.

Separate from the errors identified in *Vecinos*, the Rio Grande LNG and Rio Bravo

projects have drastically changed since FERC's prior approval. One example of this is the request to amend the certificate for the Rio Bravo pipeline, to allow a significant project redesign. For the reasons stated below, FERC's review of that amendment request is arbitrary. But this is not the only project design change: most notably, the developers still propose, and FERC is still considering, a proposal for carbon capture and sequestration (CCS), but FERC provides no analysis whatsoever of that proposal here. The CCS proposal is plainly a "connected action" that FERC could not ignore, and a significant new circumstance that requires supplemental NEPA analysis. FERC ignored other significant new information as well, including the safety risks posed by the nearby SpaceX facility.

In his concurrence and in other statements regarding the project, Chairman Phillips notes that it has been two years since the D.C. Circuit decided *Vecinos*. Numerous others have filed comments with FERC complaining about how long the remand has taken. But the delay is the developers' own fault. After *Vecinos* was decided, the developers substantially redesigned the facility, and then failed to respond to FERC's requests for information regarding the redesign. The developers cannot refuse to provide information FERC needs for its analysis and then complain that the analysis is taking too long. NEPA does not allow agencies to skip procedural steps or approve a project without the required hard look simply because the agency, applicant, or others have gotten impatient. If anything, as Commissioner Clements explained in her dissenting statement, FERC's decision to skip legally required steps and analysis here will further postpone the project, if it takes litigation and a court order to compel FERC to do what FERC should have done, and should have known it needed to do, in the first place.

The undersigned remain opposed to these projects. If FERC had properly solicited and considered community input, and taken a hard look at these projects, FERC would have seen that

these projects are contrary to the public interest and should be denied. FERC cannot avoid the issue by skipping steps and failing to fully grapple with these adverse impacts.

FERC should correct this error now, withdraw its approval, and refrain from making a final decision until FERC has provided the analysis and public participation opportunities the law requires.

I. Statement of Issues

Pursuant to 18 C.F.R. § 385.713(c)(1), we offer the following concise statement of alleged errors. These errors are explained in greater detail below.

- A. FERC cannot refuse to consider issues purportedly outside the scope of the remand order or amendment request. FERC has prepared a completely new analysis of air pollution impacts, with changes regarding the sources, amounts, and impacts of air pollution. Members of the public must have the opportunity to comment on and dispute this new material. And beyond the new material FERC has already considered, FERC must also consider other significant new information bearing on the projects, in light of FERC's ongoing control and authority to act on that information. 40 C.F.R. § 1502.9(d).
- B. FERC acted arbitrarily by reapproving the projects and granting the amendment without addressing Rio Grande's plans to incorporate carbon capture and sequestration ("CCS") into the terminal. This plan is both a connected action that must be considered before reapproving the terminal and pipeline, 40 C.F.R. § 1501.9(e)(1) and significant new information that requires FERC to supplement its prior NEPA analysis, 40 C.F.R. § 1502.9(d).

C. FERC's analysis of air pollution impacts on environmental justice communities is arbitrary.

1. FERC failed to explain, or even acknowledge, substantial changes to the estimates of project air emissions. NEPA requires such explanation. Moreover, FERC's failure to explain these changes indicates that FERC has uncritically accepted the applicant's submissions without exercising FERC's own independent judgment.
2. In discussing PM_{2.5} pollution, FERC ignored data from the air monitor closes to the terminal site. This monitor, at Isla Blanca, reports higher baseline values of PM_{2.5}. Using these baseline values indicates that the project is likely to cause or contribute to NAAQS exceedances.
3. In discussing ozone, FERC fails to provide, cite to, or otherwise incorporate an actual analysis. FERC merely cites the applicants' statement that an ozone analysis was performed, without providing the analysis or explaining where it could be found. Moreover, FERC indicates that the ozone analysis here updates that performed in the FEIS, without recognizing that the FEIS's ozone analysis was incomplete, as FERC recognized in the prior rehearing order.
4. Insofar as FERC relied on the claim that project contributions to pollution would be below significant impact levels, it is unclear whether FERC included all foreseeable sources of pollution attributable to the projects, rather than merely considering pollution from stationary sources regulated by the Clean Air Act.

5. FERC improperly determined that impacts to environmental justice communities will be less than significant based on its conclusion that the NAAQS would not be exceeded. FERC must consider the possibility of significant or harmful impacts at air pollution levels below the NAAQS, especially as a result of cumulative exposure to multiple pollutants. *Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1123 (D.C. Cir. 1971).
6. Rather than merely identify the proportion of low income and minority communities within 50 kilometers of the project, FERC was required to identify which communities would actually experience impacts as a result of the project, and address whether the communities that would actually be harmed were disproportionately environmental justice communities.
7. Where FERC acknowledges the potential for significant impacts, FERC cannot conclude that mitigation will avoid those impacts, where no actual mitigation plan has been developed, and where FERC has not even demonstrated that mitigation would be possible.
8. FERC violated NEPA and the natural gas act by refusing to rigorously explore the alternative of mitigating air pollution using CCS.
9. FERC could not cure the NEPA deficiencies identified in *Vecinos* without

publishing a new NEPA document, and providing the public with the opportunity to comment thereon. FERC failed to publish its updated environmental justice analysis in a supplemental EIS or other NEPA document.

10. Deficiencies in FERC's NEPA Analysis Regarding Environmental Justice Also Undermine FERC's Natural Gas Act Conclusion that the Projects Are In The Public Interest

D. FERC's analysis of the impacts of the Project's greenhouse gas emissions is arbitrary.

1. FERC's conclusion that it cannot evaluate the significance of greenhouse gas emissions was arbitrary and unsupported by evidence. The Natural Gas Act and NEPA require FERC to consider greenhouse gas emissions in FERC's public interest analysis and to determine whether greenhouse gas emissions are significant. *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017) ("*Sabal Trail*"). Here, FERC's claim that it lacked any viable method for doing so was arbitrary, where FERC does not dispute that the social cost of carbon is generally accepted in the scientific community, and where FERC's criticisms of that tool are unsupported. *Vecinos*, 6 F.4th 1321. In the alternative, FERC's refusal to apply its own interim climate guidance, or to otherwise make an ad hoc determination, was also arbitrary.
2. FERC violated NEPA and the Natural Gas Act by refusing to supplement its prior analyses to rigorously explore NextDecade's plan to mitigate greenhouse gas

emissions using CCS.

E. FERC's arbitrarily failed to consider new information concerning the Rio Bravo pipeline amendment application.

1. The applicants provided FERC new information about the source of the gas that will be transported.
2. After Rio Bravo submitted its amendment application, the nearby Annova project was cancelled and its planned capacity on the Valley Crossing Pipeline became available. FERC failed to consider whether Rio Bravo could use the proposed Valley Crossing Pipeline expansion to provide some of the gas for the Project, obviating the need for one of the Rio Bravo pipelines.

F. FERC arbitrarily failed to supplement its EIS based on new information concerning SpaceX.

1. On the same day FERC issued the Remand Order, SpaceX performed a test launch of the Starship Superheavy Rocket. While FERC previously assessed impacts from launches of smaller rockets, FERC did not assess impacts from this kind of rocket. The Superheavy's radius and magnitude of impacts was far outside what FERC analyzed in its FEIS. Thus, this new information about SpaceX triggers FERC's obligation to supplement its FEIS for the Project.

II. Argument

A. FERC Cannot Limit Its Analysis to The Two Issues Identified in the *Vecinos* Remand and Rio Bravo's Proposed Design Changes

Vecinos held that FERC's analysis was deficient in two ways, undermining both FERC's NEPA and Natural Gas Act analyses. First, FERC had not justified limiting its analysis of environmental justice impacts to communities within two miles of the terminal, given FERC's statements that impacts would be felt outside this radius (*e.g.*, that air quality would be impacted up to 31 miles away).¹ Second, FERC failed to address whether 40 C.F.R. § 1502.21 (formerly § 1502.22) required FERC to use methods generally accepted in the scientific community, including the social cost of carbon, to evaluate greenhouse gas emissions.²

The Remand Order states that FERC will not consider comments that do not pertain to these two issues, or to the requested Rio Bravo redesign.³ But the order itself is not so limited, nor could it be. Both the project and the environmental context have changed significantly since FERC's prior approval, and FERC cannot turn a blind eye to these changes.

For example, rather than merely redo the environmental justice analysis based on the prior analysis of air impacts, FERC requested that the applicants redo the air pollution and environmental justice analyses in their entirety. The new analysis of air pollution predicts fewer emissions from terminal operation than the FEIS predicted.⁴ The Remand Order does not explain

¹ *Vecinos para el Bienestar de la Comunidad Costera v. FERC*, 6 F.4th 1321, 1325 (D.C. Cir. 2021).

² *Id.*

³ Remand Order PP87-88.

⁴ *Compare* Accession No. 20220822-5167 at Table 9-5, *with* FEIS at 4-262.

these changes. Reducing the number of liquefaction trains from six to five⁵ cannot explain the reduced emission estimate: reducing emissions from one part of the terminal by 17% cannot explain why the estimate the entire terminal's NOx emissions decreased by 46% (from 2058.6 tpy to 1112.35).⁶ FERC elsewhere asserts that updated emissions analyses "corrected 'a mathematical error in a previous calculation,'" ⁷ but FERC does not provide a source for this quote, explain what calculation contained the error (*i.e.*, the FEIS or one of the developers' post-remand submissions), what this error was, or what impact it had. It is unlikely that FERC believes that this error explains the drastic difference between the FEIS and current emission estimates, but if FERC did contend this, the contention would require explicit explanation.

Rather than merely reconsidering the scope of the environmental justice analysis, FERC now rests on applicant submissions that consider a different set of emission sources, with different emission rates, and different baseline pollution levels. We agree that it would have been improper for FERC to ignore this new information—FERC needs to consider the project that the developers actually intend to build, and the impacts the surrounding communities would actually suffer. And FERC plainly had authority to do so. Even though the remand specifically concerned FERC's prior analysis of the Project's climate and environmental justice impacts, "once FERC reacquired jurisdiction, it had the discretion to reconsider the whole of its original decision."⁸ But the public must have a meaningful opportunity to review and comment on this new information, and in particular, to raise objections, errors, or other concerns with FERC.

⁵ See Remand Order P5 n.13.

⁶ Compare FEIS at 4-262, with Accession No. 20220822-5167 at Table 9-5.

⁷ Remand Order P138 n.317.

⁸ See *Michigan Gas Co. v. FERC*, 133 F.3d 34, 38 (D.C. Cir. 1998).

Relatedly, FERC cannot turn a blind eye to other new information beyond that provided by the applicants or addressed in the Remand Order. NEPA imposes an ongoing duty to supplement analyses in the face of new information.⁹ Most obviously, FERC cannot ignore the developers' still-pending proposal to add carbon capture and sequestration to the terminal.¹⁰ In addition, new information about the SpaceX facility—including the recent severe explosion—must be considered in FERC's safety and cumulative impact analyses.¹¹

Finally, regardless of changed circumstances, FERC still must consider the environmental justice issues that were litigated but not decided in *Vecinos*, including FERC's refusal to acknowledge the potential for significant, disproportionately adverse impacts from air pollution that does not violate the National Ambient Air Quality Standards.¹²

B. FERC Cannot Re-Approve The Projects Without Considering Carbon Capture and Sequestration

NextDecade plans to build carbon capture and sequestration ("CCS") as part of the terminal. FERC recently confirmed that NextDecade's CCS proposal remains pending despite FERC's decision to pause environmental review,¹³ and CCS remains the centerpiece of

⁹ 40 C.F.R. § 1502.9. 40 C.F.R. § 1502.9. FERC also has a continuing obligation to consider changed circumstances under the Natural Gas Act. *See* 15 U.S.C. § 717o (FERC can only amend orders when it is "necessary or appropriate" to do so); *Michigan v. EPA*, 576 U.S. 743, 752 (2015) ("[A]ppropriate is the classic broad and all-encompassing term that naturally and traditionally includes consideration of all the relevant factors."

¹⁰ *Infra* § II(B).

¹¹ *Infra* § II(F).

¹² *California Public Utilities Commission v. Federal Energy Regulatory Commission*, 29 F.4th 454, 462 (9th Cir. 2022); *accord Canning v. NLRB*, 823 F.3d 76, 79 (D.C. Cir. 2016).

¹³ *See* Accession 20230518-3061.

NextDecades public and investor communications regarding the project.¹⁴

Although CCS has the potential to reduce greenhouse gases and other air pollution, it also entails harmful environmental impacts that must be considered now. Most obviously, the captured CO₂ needs to go somewhere, which will require another pipeline. NextDecade has not identified a sequestration site or a route for the pipeline, but NextDecade has indicated that the pipeline would be roughly ten miles long. Given the location of the Rio Grande terminal, it is impossible to add a pipeline connecting to any potential sequestration site without crossing wetlands or other water bodies,¹⁵ thereby increasing the project's already-significant impacts on a protected and cherished wetland ecosystem. Moreover, it appears that it would be difficult, if not impossible, to construct an additional pipeline without impacting sites culturally significant to the Carrizo/Comecrudo Tribe.¹⁶ Finally, although there are relatively few CO₂ transportation pipelines operating today, there are already signs of potential harm from accidents or rupture,¹⁷ and FERC must ensure that these safety impacts (and the cumulative safety impact of the CO₂ pipeline with additional infrastructure) are considered.

¹⁴ See <https://www.next-decade.com/rio-grande-lng/> (last visited May 22, 2023 and attached); NextDecade Corporation, Corporate Presentation (August 2022), available at <https://investors.next-decade.com/static-files/d4fb70e5-e639-4859-b2bc-a62be1cb5435> and attached.

¹⁵ See, e.g., FEIS at 4-58 (map showing wetlands at the terminal site), 4-99 (map showing nearby sensitive/managed wildlife habitats).

¹⁶ The Tribe still have not been consulted regarding the potential impacts of the Project despite numerous requests. This further underscores how inappropriate it is that FERC has issued the Remand Order without supplementing its prior NEPA analysis.

¹⁷ Dan Zegart, Huffington Post, *The Gassing of Satartia* (Aug. 25, 2021) (describing impact of a 2020 CO₂ pipeline rupture in Mississippi), available at https://www.huffpost.com/entry/gassing-satartia-mississippi-co2-pipeline_n_60ddea9fe4b0ddef8b0ddc8f (attached) (this document was attached to Sierra Club, et al.'s Protest in CP22-17 and was, thus, already before FERC in these proceedings).

CCS would also drastically increase the terminal's water consumption and discharge. The National Energy Technology Laboratory has estimated that CCS equivalent to Rio Grande's proposal (amine absorption to capture 90% of the emissions at a combined cycle plant) increases water intake by more than 60%, and results in more than two and a half times the water discharge.¹⁸ Thus, adding CCS would likely increase operational water use by 2.5 million gallons per month.¹⁹ FERC's initial EIS for the Project does not address the impact of facility (*cf.* shipping vessel) water discharges.²⁰

Aside from these well-known concerns, CCS has other potential harmful impacts that require a hard look as well. NextDecade proposes to use amine-absorption to capture carbon dioxide, but it is unclear how much of this amine sorbent would be released during operation, or the impacts of such release. The CCS process is very energy intensive, and it is unclear whether the existing whether and how the existing terminal design can provide this energy (whether through additional on-site gas combustion, electricity, or otherwise), which is likely to be roughly 11% more than would be required without CCS.²¹ Thus, either "a much bigger power plant needs

¹⁸ NETL 2019 at 527.

¹⁹ See Final EIS, at 4-45 – 4-46 (Accession 20190426-3020).

²⁰ *Id.*

²¹ National Energy Technology Laboratory, *Cost and Performance Baseline for Fossil Fuel Energy Plants Vol. 1: Bituminous Coal and Natural Gas to Electricity*, NETL-PUB-22638, at 10 (Sept. 24, 2019) ("NETL 2019"), available at https://netl.doe.gov/projects/files/CostAndPerformanceBaselineForFossilEnergyPlantsVol1BitumCoalAndNGtoElectBBRRev4-1_092419.pdf (attached) (this document was attached to Sierra Club, et al.'s Protest in Docket CP22-17 and was, thus, already before FERC in these proceedings). The "efficiency reduction is caused primarily by the auxiliary loads of the capture system and CO₂ compression as well as the significantly increased cooling water requirement, which increases the auxiliary load of the [circulating water pumps] and the cooling tower fan." *Id.* at 528. Accord Energy Information Administration, Assumptions to the Annual Energy Outlook 2021: Electricity Market Module, at 6 (Feb. 2021) heat rate for combined cycle plants with 90%

to be built in order to achieve the same ‘net’ power generation capacity, as it would have been without CO2 capture,” or operators must accept that the facility will produce less useful output.²²

This same principle applies here, where gas turbines are used to power liquefaction equipment rather than purely for electricity generation. Less directly, the CCS proposal would increase impacts to wildlife, if for no other reason than the significant increase in vehicle traffic that construction and operation of CCS infrastructure would entail.²³

Because of these potential adverse impacts, because of CCS’s potential benefits, and because NextDecade has unequivocally stated that it plans to build CCS equipment if the Rio Grande terminal moves forward, FERC cannot reauthorize the terminal without considering CCS now. The CCS proposal is both a connected action within the meaning of 40 C.F.R. § 1501.9(e)(1) and significant new information that requires FERC to supplement its prior NEPA analysis, per 40 C.F.R. § 1502.9(d).

NEPA’s connected action requirement prohibits agencies from segmenting review of interrelated projects. “Actions are connected if they: (i) Automatically trigger other actions that may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; (iii) Are interdependent parts of a larger action and

CCS roughly 12% higher than without CCS), *available at* <https://www.eia.gov/outlooks/aeo/assumptions/pdf/electricity.pdf> (attached) (this document was attached to Sierra Club, et al.’s Protest in Docket CP22-17 and was, thus, already before FERC in these proceedings).

²² IECOM 2018 at 14.

²³ See Biological Opinion, Accession 20191002-5102, at 30 (“[v]ehicle collision is the leading cause of death of ocelots in Texas; reducing road mortality is considered the single most important strategy in reducing the risk of ocelot extinction in the U.S.”); *accord* Final EIS at 5-20.

depend on the larger action for their justification.”²⁴ Here, the CCS and terminal projects are plainly interdependent. The CCS project would have no purpose, and will not proceed, without the terminal. That is enough to render the two connected. But available evidence indicates that the converse is true as well: the CCS proposal is central to NextDecade’s efforts to market itself and find the customers it would need to move the project forward, and nothing in these statements indicates that NextDecade would choose to proceed with the terminal, or be able to do so, without CCS.

In the alternative, even if the CCS proposal is not a connected action, it still compels FERC to supplement the prior NEPA analysis. The CCS proposal is both significant new information about the applicant’s actual plans *and* significant new information about what is possible. NEPA requires consideration of “alternatives” and “the environmental impacts” thereof. Where new information allows an agency to consider previously rejected or unconsidered environmentally beneficial alternatives, NEPA requires supplementation. For example, in *Alaska Wilderness Recreation and Tourism Association v. Morrison*, 67 F.3d 723 (9th Cir. 1995), the Ninth Circuit explained that where a timber sale contract that was the basis for the description of project need was cancelled, a supplemental analysis was required, because alternatives that had previously rejected became viable.²⁵ In short, the CCS proposal is “a significant development” that “provides a seriously different picture of the environmental landscape.”²⁶ Even if FERC somehow concludes that the CCS and terminal proposals are not connected actions, FERC still

²⁴ 40 C.F.R. § 1501.9(e).

²⁵ 67 F.3d 723, 728-30 (9th Cir. 1995).

²⁶ *Stand Up for California! v. U.S. Dep’t of the Interior*, 994 F.3d 616, 629 (D.C. Cir. 2021).

must supplement the terminal EIS to address NextDecade's new determination that CCS is feasible and NextDecade's plan to actually proceed with CCS. Thus, FERC violated NEPA by not supplementing its initial EIS.²⁷

C. FERC's Analysis of Environmental Justice Impacts of Air Pollution Is Arbitrary

1. FERC Has Not Explained, or Even Acknowledged, Substantial Changes in Emission Data

The Remand Order rests on new air pollution emission and modeling data submitted by the applicants. As noted above, this data reflects a different set of emission sources, rates, and background than what was considered in the FEIS.

For example, the applicants' August 2022 response estimates direct terminal NOx emissions to be 46% lower than what was predicted in the FEIS: 1112.35 tpy, down from 2058.6.²⁸ This dramatic change in emission rates cannot be explained by the only design change acknowledged in the Remand Order: omission of one of the six liquefaction trains. Clearly, the applicants contend that *something* else has changed, but FERC has not provided the public with any explanation as to what the change is.

The applicants separately claim that marine vessel NOx emission will be 91% lower than what the FEIS estimated: 84.9 tpy, down from 927.3.²⁹ By comparison, Texas LNG estimates that mobile NOx emissions associated with its Project are 110.43 tpy, exceeding those disclosed

²⁷ *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 372 (1989).

²⁸ Compare FEIS at 4-262, with Accession 20220822-5167, at Table 9-5. See also Accession 20230127-5156, at response 3 (reaffirming the August 2022 direct emission estimates).

²⁹ Compare Accession 20230127-5156, at Table 9-24, with FEIS 4-262.

by Rio Grande LNG.³⁰ This is despite Rio Grande LNG anticipating 238 more vessels visiting its project each year than Texas LNG.³¹ The Remand Order does not identify *any* change at all in the number, type, or behavior of marine vessels, much less a change that would explain an order-of-magnitude reduction in NOx emissions. And NOx is not the only pollutant with a new estimate: the applicants now estimate significantly lower emissions of greenhouse gases and other criteria pollutants as well, from the terminal and other associated sources.

FERC cannot rely on these new, lower emission estimates without explaining to the public what has changed and why, and without providing the public with a meaningful opportunity to comment thereon. And FERC itself cannot uncritically accept the applicants' submissions. The FEIS purportedly reflects *FERC's* estimates of likely emissions. Before accepting new estimates, FERC's technical staff must review them, pass judgment on them, and demonstrate that they have done so. As it stands, it was arbitrary for FERC to accept the new, lower emission estimates without an explanation as to why these estimates are lower than those presented in the FEIS.

2. FERC Must Consider Data Showing Higher Baseline Pollution, and Thus Increased Risk of NAAQS Exceedances.

There are two PM2.5 air monitors in Cameron County, where the terminal would be located. The applicants based their analysis on baseline data from the monitor that is farther from the terminal site, which reports lower baseline levels of PM2.5 pollution. FERC must also consider data from the closer monitor, which indicates that operation of the project may lead to

³⁰ Accession 20220502-5075, at Table B-33. Texas LNG also appears to have revised down the anticipated vessel emissions associated with its project. *Compare* Texas LNG FEIS, at Table 4.11.1-6, *with* Accession 20220502-5075, at Table B-33.

³¹ *Compare* FEIS at 4-41, *with* Texas LNG FEIS at 4-23.

exceedances of the hourly and annual PM2.5 NAAQS.

Rio Grande's analysis relied on baseline data from the AQS ID 48061006 air monitor, in Brownsville.³² This monitor is roughly 28 km from the terminal site. According to Rio Grande this monitor shows background PM2.5 levels of 9.7 and 28 $\mu\text{g}/\text{m}^3$ on annual and hourly bases, respectively, from 2019-2021.³³ When added to the PM2.5 emissions that Rio Grande modeled for these projects, Rio Grande estimated PM2.5 levels barely below the NAAQS: 0.13 and 0.67 $\mu\text{g}/\text{m}^3$ below the annual and hourly NAAQS, respectively.³⁴

The Texas Commission on Environmental Quality maintains another PM2.5 air monitor, AQS ID 480612004, in Isla Blanca.³⁵ For years 2020-2022 the Isla Blanca monitor shows an annual PM2.5 concentration of 11.2 $\mu\text{g}/\text{m}^3$ and an hourly PM2.5 concentration of 31 $\mu\text{g}/\text{m}^3$, higher than the background values indicated by the more distant Brownsville monitor.³⁶ If Rio Grande's cumulative impact analysis is modified to use these higher baseline values, the result shows potential violation of both the annual and hourly NAAQS for PM2.5:

³² Accession 20230127-5156, at Tables 3-3 and 4-2.

³³ Accession 20230127-5156, at Table 3-3.

³⁴ *Id.* at Table 4-2.

³⁵

https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=report.view_site&siteAQS=480612004

³⁶ Data from this monitor, AQI 480612004, was downloaded from the TCEQ website for January 1, 2020 through December 31, 2022. This data was then used to calculate the annual mean over 3 years. Data available here:

https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=report.view_site&siteAQS=480612004.

| Table 1. PM _{2.5} Cumulative Impacts Analysis Using Data from Monitor AQS ID 480612004 | | | | | | |
|---|----------------------------------|---------------------------------|-------------------------------|------------------------------------|-------------------------------|-------------------------------|
| Avg. Period | Facility (µg/m ³) | Offsite (µg/m ³) | Model (µg/m ³) | Background (µg/m ³) | Total (µg/m ³) | NAAQS (µg/m ³) |
| 24-hour | .00054 | 6.33 | 6.33 | 31 | 37.33 | 35 |
| Annual | .0071 | 2.16 | 2.17 | 11.2 | 13.37 | 12 |

When using monitor data from a monitor more closely situated to the facility site, FERC's conclusion that the total concentration of background criteria pollutants would remain under the applicable NAAQS does not hold. Crucially, this table only includes operational emissions, rather than the higher emissions considered in the Remand's discussion of cumulative operation and construction. This indicates that NAAQS exceedances may be long term, rather than limited to the temporary period in which construction and operation occur simultaneously. And it suggests that impacts may occur farther away than the 2.2 mile radius that FERC estimates for construction emissions. For instance, the EPA's report on the environment finds that PM_{2.5} can remain air borne for long periods and travel hundreds of miles.³⁷

FERC has an obligation to consider the full impacts of the decision to reauthorize the project and inform the public of those impacts.³⁸ To do so, FERC must "make use of reliable existing data and resources."³⁹ TCEQ's monitor at Isla Blanca is a reliable existing source of data

³⁷ EPA, Report on the Environment: Particulate Matter Emissions. (Available at <https://cfpub.epa.gov/roe/indicator.cfm?i=19>).

³⁸ 40 C.F.R. § 1502.1.

³⁹ 40 C.F.R. § 1502.23.

on the air quality where the project will be located. FERC has an obligation to incorporate data from this monitor into its analysis of the projects' impacts on air quality because it more accurately reflects the current true conditions of PM_{2.5} levels near the project site. Thus, it more accurately discloses what the project's impacts will be on local air quality and the health and safety of nearby residents. This is particularly true as data from Isla Blanca monitor indicates cumulative operational PM_{2.5} levels will exceed the NAAQS, whereas data from the Brownsville monitor does not.

3. FERC's Ozone Estimates Are Unexplained

In discussing ozone impacts, the Remand Order simply cites the applicant's November 2022 response.⁴⁰ That response states that an ozone analysis was performed, but it doesn't provide any information about it, or explain where to find it.⁴¹ The Remand Order states that Rio Grande updated the analysis presented in the FEIS.⁴² But the analysis presented in the FEIS was itself deeply flawed, as FERC recognized in the rehearing order, because it excluded cumulative emissions from Texas LNG and emissions from both terminals' marine vessel traffic.⁴³ Here, it is unclear whether the updated ozone modeling repeats that error. And if this modeling did include marine vessel emissions, it is unclear what estimates of vessel emissions it used – the higher emissions provided by FEIS⁴⁴ and affirmed in March 2022 modeling⁴⁵, or substantially reduced

⁴⁰ Remand Order P150 n.328.

⁴¹ *Contra* 40 C.F.R. § 1502.23 (“[Agencies] ... shall make explicit reference to the scientific and other sources relied upon for conclusions in the statement.”).

⁴² Remand Order P150.

⁴³ Accession 20200123-3129 P55.

⁴⁴ FEIS 4-262.

⁴⁵ Accession 20220303-5182 at Table 9-7 (stating “Calculations for mobile source operations

emissions included in the January modeling.⁴⁶

The fact that the Remand Order does not explain what analysis was actually performed further illustrates why an actual NEPA document, which explained FERC's analysis in one place, was required. Perhaps further explanation of the ozone analysis exists somewhere in the record, but it is not cited in the remand order, or in the document the remand order cites when discussing ozone.

4. FERC's Analysis Misuses "Significant Impact Levels"

The remand order states that the radius of air impacts from the Rio Grande LNG Terminal is 12.8 kilometers.⁴⁷ FERC justifies this determination by relying on Significant Impact Level (SIL) modeling conducted by Rio Grande LNG.⁴⁸ This modeling does not appear to incorporate all sources of criteria pollutants associated with the project, nor does FERC explain inconsistencies in the radius of impact demonstrated by other filings. It is also unclear whether FERC relied on Rio Grande's SIL modeling as any part of the basis of its conclusion that that air impacts from the Terminal's emissions are insignificant. To the extent that it did, this is a misuse of SIL modeling.

a) Significant impact levels should not be a basis for determining whether impacts from Rio Grande's emissions are significant.

As justification for using the significant impact level modeling to identify the radius of air

have not changed since the previous FERC submittal.")

⁴⁶ *Accession* 20230127-5156, at Table 9-24. *See* discussion *supra* regarding inconsistencies in Rio Grande's reported mobile emissions associated with the Terminal.

⁴⁷ Remand Order P118.

⁴⁸ *Id.*

emissions impact from Rio Grande’s Terminal, FERC, without citation states that emissions modeled below significant impact levels “may generally be considered to be a sufficient demonstration that the proposed source will not cause or contribute to a violation of the applicable National Ambient Air Quality Standard or Prevention of Significant Deterioration increment.”⁴⁹ It is unclear whether FERC relied on the SILs modeling to determine that the project would not cause or contribute to a NAAQS violation and therefore were insignificant,⁵⁰ but to the extent that it did, that was inappropriate.

SILs are tools designed for use in the Clean Air Act’s Prevention of Significant Deterioration program, but they are contentious—and litigated—even in that context.⁵¹ Moreover, EPA has emphasized that a source *can* cause or contribute to a NAAQS violation even when the source’s emissions do not exceed significant impact levels.⁵² EPA regulations say that “a major source or major modification *will be considered* to cause or contribute to a violation of the national ambient air quality standard when such a source or modification would, at a

⁴⁹ Remand Order P118 n.269.

⁵⁰ Remand Order P151.

⁵¹ See e.g. *Sierra Club v. EPA*, 705 F.3d 458, 465-66 (D.C. Cir. 2013) (vacating EPA’s PM 2.5 SILs regulation because EPA lacks “authority to exempt sources from the requirements of the” Clean Air Act and the regulation “simply states that the demonstration required under [section] 165(a)(3) is deemed to have been made if a proposed source or modification’s air quality impact is below the SIL.”); *Sierra Club v. EPA*, 955 F.3d 56, 63-64 (D.C. Cir. 2020) (Affirming that the Court lacks jurisdiction to vacate a non-binding policy document as part of a facial challenge but explaining that “[t]he SILs Guidance is not sufficient to support a permitting decision—simply quoting the SILs Guidance is not enough to justify a permitting decision without more evidence in the record, including technical and legal documents.”).

⁵² See EPA, *Attachment 1 to Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program*, at 7 (Apr. 17, 2018).

minimum, exceed the [] significance levels...”⁵³ This means that an exceedance of the SIL unequivocally demonstrates causation of or contribution to a NAAQS violation, should one occur the area of the facility. It does not mean that a facility does not cause or contribute to a NAAQS violation if its emissions do not exceed the SIL. EPA itself recognizes that the only reason these impact levels remain legally valid is because “the regulatory text in that section did not say that a proposed source that has an impact less than the significance level is always deemed to not cause or contribute to a violation.”⁵⁴

b) Rio Grande’s SILs modeling appears only to include operational emissions at the Terminal and its articulated radius of impact is inconsistent with other filings in this docket and the Texas LNG docket.

Whatever utility or merit significant impact levels may have under the Clean Air Act, FERC’s NEPA authority and obligations are broader in scope. Notably, while the PSD program only considers stationary sources of pollution, FERC has the authority and obligation to consider all emissions foreseeably caused by the projects—including marine vessels, vehicle traffic, *etc.* If FERC is relying on significant impact levels to define either the area of impact or significance of Rio Grande’s emissions, it must include *all* emissions associated with the project in its analysis.

Here, however, the significant impact level calculation that FERC accepted in defining a 12.8 km radius of impact, and potentially in determining the significance of the Terminal’s emissions, appears to have been based solely on the Rio Grande project’s stationary source

⁵³ 40 C.F.R. § 51.165(b)(2) (emphasis added).

⁵⁴ See EPA, *Attachment 1 to Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program*, at 7 (Apr. 17, 2018).

emissions regulated by the PSD program. We say “appears” because this is another instance in which FERC has not provided any actual analysis. The Remand Order cites Rio Grande’s January 27, 2023 submission in support of this figure.⁵⁵ That filing states that “A significant impact analysis was performed,” but it doesn’t say whether or where information about it can be found in the FERC docket.⁵⁶ Rio Grande’s August 22, 2022 submission includes a table titled “Results of the Significant Impact Analysis,” but Rio Grande states that this analysis demonstrated 1-hour NO₂ increases above the significant impact level 29 kilometers away from the project, rather than the 12.8 kilometers stated in the January 2023 filing and in the Remand Order.⁵⁷ It is entirely unclear when or how Rio Grande came up with the 12.8 km figure.

Rio Grande’s assertion that NO₂ increases above the significant impact level will only extend to 12.8 kilometers is substantially less than FERC’s finding that Texas LNG’s criteria pollutants will remain above significant impact levels as far as 24 kilometers from the site.⁵⁸ This is despite Texas LNG’s much lower anticipated emissions of criteria pollutants.⁵⁹ FERC must explain how it came to the conclusion that Rio Grande’s air emission zone of impact is less than a much a smaller facility and less than previously represented by Rio Grande itself.

In any event, when the full scope of foreseeable emissions associated with the Project are considered, it appears that other criteria pollutants will increase beyond the significant impact

⁵⁵ Remand Order P118 n.270.

⁵⁶ Accession 20230127-5156, at 26.

⁵⁷ Accession 20220822-5167, at 3-4.

⁵⁸ Accession 20230421-3057, at P33.

⁵⁹ Compare Accession 20220822-5167 at Table 9-5 (Rio Grande’s Operational emissions by year) with Accession 20220502-5075 at Table B-1.

levels as well. For example, EPA has recommended a significant impact level of 1 part per billion for ozone.⁶⁰ Here, FERC predicts an ozone increase of 1.62 ppb.⁶¹ But FERC provides no discussion of which areas will experience that increase in ozone, or how far away from the terminal site ozone levels will increase by more than 1 ppb. Similarly, as shown in Table 2, it appears all other criteria pollutants associated with the project are above the EPA set significant impact levels.

| Table 2. Comparison of Rio Grande's Terminal and Offsite Criteria Contributions to EPA's Significant Impact Levels | | | | |
|--|----------------|---|---|----------|
| Pollutant | Averaging Time | Model Concentrations ($\mu\text{g}/\text{m}^3$) ⁶² | Significant Impact Level ($\mu\text{g}/\text{m}^3$) ⁶³ | Exceeds? |
| CO | 8-hour | 2,792 | .5 | Yes |
| | 1-hour | 4,304 | 2 | |
| PM10 | Annual | 47.59 | 5 | Yes |
| | 24-hour | | | |
| PM2.5 | Annual | 2.16 | 1.2 | Yes |

⁶⁰ [https://www.epa.gov/sites/default/files/2018-](https://www.epa.gov/sites/default/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf)

[04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf](https://www.epa.gov/sites/default/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf) at 14.

⁶¹ Remand Order P150.

⁶² Remand Order, P149 at Table 1.

⁶³ 40 CFR § 51.165(b)(2).

| | | | | |
|-----|---------|-------|----|-----|
| | 24-hour | 6.33 | .3 | |
| SO2 | 3-hour | 87.99 | 25 | Yes |

The majority of these modeled increases will come from “offsite contribution[s]”, rather than the terminal facility itself.⁶⁴ That might matter for purposes of the Clean Air Act, but FERC’s Natural Gas Act and NEPA responsibilities require FERC to look at *all* foreseeable air pollution caused by the projects, not merely direct emissions from stationary sources.

5. Absence of a NAAQS Violation Does Not Mean That Impacts Are Insignificant, Especially for Environmental Justice Communities

Regardless of whether Rio Grande’s cumulative impact will cause a violation of the NAAQS, there is significant evidence that there are harmful and adverse health impacts to communities exposed to increased air pollution at levels below the NAAQS. FERC’s assumption that air pollution which does not violate the NAAQS will not have health impacts and will be insignificant is mistaken.⁶⁵

The EPA has recognized that levels of PM_{2.5}, ozone, nitrogen-dioxide, and carbon monoxide below the NAAQS thresholds can result in adverse health impacts. In January of this year the EPA announced a proposal to reduce the annual PM_{2.4} NAAQS between 9.0 and 10.0 µg/m³.⁶⁶ According to the Policy Assessment for this announcement, the EPA has determined

⁶⁴ *Id.*

⁶⁵ *Id.* P151. In the instance where FERC found that NAAQS violations may be possible, concurrent construction and operation, FERC *still* determines that the impact will not be significantly adverse to EJ communities because Rio Grande LNG must submit a plan on how to address those violations at some point prior to commissioning. *Id.* P 141-43.

⁶⁶ EPA, National Ambient Air Quality Standards for PM. <https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm>; EPA Press Office, EPA Proposes to

that the current PM_{2.5} NAAQS are not adequately protective of human health and that scientific evidence supporting that conclusion has been available since at least 2020.⁶⁷ The annual PM_{2.5} concentration from the air quality monitor located as Isla Blanca State Park, approximately 10 km from the Project site and 5 km away from the City of Port Isabel, is 11.2 µg/m³.⁶⁸ This is just .8 µg/m³ below the current NAAQS and more than the proposed revision of the annual NAAQS. The EPA's policy assessment indicates that nearby EJ communities are likely already suffering adverse impacts from the level of PM_{2.5} concentrations in their region. Any addition from projects like Rio Grande LNG should be considered significant no matter the quantity.⁶⁹

Additionally, the policy assessment for the EPA's 2010 Rulemaking for NO₂ NAAQS

Strengthen Air Quality Standards to Protect the Public from Harmful Effects of Soot (Jan. 6, 2023). <https://www.epa.gov/newsreleases/epa-proposes-strengthen-air-quality-standards-protect-public-harmful-effects-soot>.

⁶⁷ EPA, Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter at 1-14-15 (May 2022) ("The EPA is reconsidering the December 2020 decision because the available scientific evidence and technical information indicate that the current standard may not be adequate to protect public health and welfare, as required by the Clean Air Act. We note that the 2020 [Policy Assessment] concluded that the scientific evidence and information supported revising the level of the primary annual PM_{2.5} standard to below the current level of 12.0 µg/m³."); *see also* EPA Press Office, EPA Proposes to Strengthen Air Quality Standards to Protect the Public from Harmful Effects of Soot (Jan. 6, 2023) ("EPA estimates that if finalized, a strengthened primary annual PM_{2.5} standard at a level of 9 micrograms per cubic meter, the lower end of the proposed range, would prevent: up to 4,200 premature deaths per year; 270,000 lost workdays per year; result in as much as \$43 billion in net health benefits in 2032.") (Available at <https://www.epa.gov/newsreleases/epa-proposes-strengthen-air-quality-standards-protect-public-harmful-effects-soot>.)

⁶⁸ Data from this monitor, AQI 480612004, was downloaded from the TCEQ website. This data was then used to calculate the annual mean over 3 years. Data available here: https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=report.view_site&siteAQS=480612004. As discussed further below, data from this monitor was not used by the Applicant to assess the air quality impacts of the project. Instead, it used a monitor from Brownsville, approximately 28 km away from the Project site.

⁶⁹ *See supra*. § II(C)(4).

thresholds found there was “little evidence of any effect threshold” for NO₂.⁷⁰ That same PA found evidence of adverse health effects from NO₂ exposure at levels below 53 ppb and from short term NO₂ exposure.⁷¹ This is less than the current NO₂ NAAQS threshold of 100 ppb.⁷² It is also less than the modeled cumulative impacts of the project.⁷³ Similarly, in its 2011 Rulemaking for the carbon-monoxide (CO) standards, the EPA recognized that epidemiological studies showed associations between worsened cardiovascular outcomes at levels below the current NAAQS threshold for CO.⁷⁴ The EPA also found in the 2015 rulemaking on the current ozone standard, that exposure to ozone at 60 parts per billion (ppb) could result in adverse health impacts, such as declining lung function and pulmonary inflammation, which is 10 ppb less than the current ozone standard.⁷⁵ As discussed *supra*, it is unclear whether FERC corrected its prior ozone analysis deficiencies by including mobile emissions and Texas LNG’s emissions in its updated ozone analysis. If it didn’t, this project likely contributes to ozone concentrations above 60 ppb given that the terminal’s emissions alone bring ozone contributions to 58.6 ppb.⁷⁶

These repeat findings of the EPA demonstrate that even if FERC were correct in concluding that the cumulative air impacts would not exceed the NAAQS thresholds, this would

⁷⁰ 75 Fed. Reg. 6474 at 6880 (Feb. 9, 2010) (citing Integrated Science Assessment, section 3.1.7 and 5.3.2.1).

⁷¹ *Id.*

⁷² 40 C.F.R. Pt. 50, App. S §3.2.

⁷³ The cumulative impact is 153.62 µg/m³. Remand Order, P 149. This is equivalent to 81.71 ppb.

⁷⁴ 76 Fed. Reg. 54294, 54307 (Aug. 31, 2011).

⁷⁵ NAAQS for Ozone, 80 Fed. Reg. 65292, 65303 & 65317-65318 & 65322 (Oct. 26, 2015).

⁷⁶ Remand Order P150.

not demonstrate that the cumulative air pollution would not adversely affect the health of nearby communities. *Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1123 (D.C. Cir. 1971).

The consequences of health impacts below the NAAQS may be more acutely experienced by the EJ populations FERC has identified in the updated EJ and air impacts analysis. As EPA has explained in its guidance on evaluating environmental justice impacts in NEPA review: “Focusing the analysis [on the relevant environmental justice context] may show that potential impacts, which are not significant in the NEPA context, are particularly disproportionate or particularly severe on minority and/or low-income communities.”⁷⁷ Thus, the direct, indirect, and cumulative effects of a project may have a disproportionately severe or adverse impact on an environmental justice community even if an agency determines that the general impacts are not significant, as FERC has determined in the Remand Order. For instance, EPA recognizes that lack of access to health care is a factor which increases a community’s risk of environmental hazards.⁷⁸ In Cameron County, 30% of the Hispanic/Latino population is uninsured.⁷⁹ This is nearly twice the uninsured rate of 18% for Texas as a whole.⁸⁰ Moreover, the communities closest to the facilities do not have access to a hospital. FERC has an obligation to determine whether factors such as this and others increase the significance of the cumulative effect of emissions from multiple facilities on nearby environmental justice communities, regardless of whether ambient

⁷⁷ [EPA](#) Guidance at 3.2.2.

⁷⁸ EPA Guidance at 2.3

⁷⁹ https://data.census.gov/table?t=Health&g=040XX00US48_050XX00US48061

⁸⁰ https://data.census.gov/table?t=Health&g=040XX00US48_050XX00US48061

air quality remains below the NAAQS.⁸¹

6. FERC's Environmental Justice Analysis Does Not Identify Which Communities Will Actually Be Impacted

FERC identified a potentially impacted population of residents in census blocks groups within 50 km of the project based on EPA standards for cumulative air modeling.⁸² FERC also finds that for air impacts a less conservative radius of impact is 12.8 km based on the applicant's significant impact levels modeling.⁸³ Despite this, FERC fails to identify which census block groups, within a 50 km or 12.8 km radius, are likely to be impacted by the increased emissions from the project.

It is not enough for FERC to identify that EJ populations exist within the project's zone of impact, FERC must take the next step and identify which of those EJ populations will be most heavily impacted by constructions and operation of the project.⁸⁴ FERC is clearly aware of its obligation to conduct such an analysis. In the Remand Order's analysis of the EJ impacts from impacts to wetlands, recreational and subsistence fishing, road traffic, noise, and visual impacts, FERC identified which census block groups were most likely to feel the effects of the impacts.⁸⁵

⁸¹ See e.g. Glick Dissent to Original FERC Authorization, at 6 (“we cannot turn a blind eye to the incremental impact that increased pollution will have on economically disadvantaged communities.”)

⁸² Remand Order P118.

⁸³ *Id.* We do not believe that the significant impact levels analysis FERC refers to sufficiently includes all emissions associated with the project, nor do requesters believe that SILs are always an appropriate standard to set a radius of impact. However, since it appears FERC ultimately used a wider 50 km radius, these criticisms are unnecessary to expand on.

⁸⁴ CEQ, Guidance on Environmental Justice at 14 (“When a disproportionately high and adverse human health or environmental effect on an [EJ population] has been identified, agencies should analyze how environmental and health effects are distributed through the affected community.”).

⁸⁵ Remand Order PP120, 122, 130, 131, 152, and 161-62.

FERC did not make a similar disclosure for the census block groups that would experience the effects of increased concentrations of air emissions from the terminal. This is despite having modeled impacts of criteria pollutant emissions for all census block groups within a 50 km radius of the terminal.⁸⁶ FERC has the information necessary to identify which EJ communities are most likely to be affected by FERC's reauthorization of the project and has failed to provide that analysis to the public.

7. FERC's Reliance on a Hypothetical Future Mitigation Plan Is Arbitrary

FERC concluded that concurrent construction and operation of the Terminal may lead to exceedances of the National Ambient Air Quality Standards (NAAQS) for NO₂, PM₁₀, and PM_{2.5} on its own and cumulatively with Texas LNG.⁸⁷ Nonetheless, FERC instructed Rio Grande to come up with a plan to mitigate these impacts, and FERC concluded that the requirement to come up with a plan rendered these possible NAAQS exceedances an insignificant problem. Specifically, FERC determined that air quality impacts to environmental justice communities "would be less than significant" because of "the addition of Environmental Condition 144 in Appendix A."⁸⁸ This condition provides that Rio Grande: "shall file with the Secretary, for review and written approval ... a Project Ambient Air Quality Mitigation and Monitoring Plan for periods when construction, commissioning and start-up, and operation of the LNG terminal occur simultaneously.

⁸⁶ Accession 20230127-5156, Appendix A.

⁸⁷ *Id.* PP141, 145. As explained in more detail *infra*, FERC wrongly dismisses the significance of this new disclosure on the basis of a not-yet-written mitigation plan. *Id.*

⁸⁸ Remand Order P143.

As Commissioner Clements' dissent explains, this condition is "vague"⁸⁹ and there is no indication that it will be effective in reducing air quality impacts to environmental justice communities below the significance threshold. Thus, FERC's determination that these impacts on environmental justice communities are not significant is unsupported and arbitrary.

FERC has not even attempted to explain how this proposed mitigation measure will reduce air quality impacts to environmental justice communities below the significance level. The new condition is essentially a plan to have a plan. FERC has ordered Rio Grande to come up a monitoring and mitigation plan rather than developing such a plan.⁹⁰ Because the monitoring and mitigation plan is currently hypothetical, it is impossible to determine its effectiveness.⁹¹ And the condition is so vague as to preclude even an inference on whether the ultimate mitigation measures will work. For example, it is not clear that Rio Grande will have to include any mitigation measures to *prevent* a NAAQS exceedance rather than acting after an exceedance has occurred. It's not clear what FERC would do to ensure that NAAQS are not exceeded. The condition provides no criteria for when FERC will approve or disapprove Rio Grande's plan. It's not even clear from the text whether this is a "condition" in the ordinary sense of the term. Can construction, commissioning, or operations occur before the plan is approved by FERC? In short, FERC has not justified its finding that these impacts will not be significant on the basis of this environmental "condition."

⁸⁹ Clements Dissent P4.

⁹⁰ *Accord id.* P4 n.12.

⁹¹ *Cf. Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989) (NEPA's EIS requirement "ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts.").

This is not to say that mitigation is not worthwhile. NEPA requires FERC to consider possibilities for mitigation, and the Natural Gas Act provides FERC with authority to require mitigation. And in particular, in some circumstances, NEPA permits agencies to rely on mitigation measures to determine that a given environmental effect is less than significant.⁹² But when an agency does so, it must “sufficiently demonstrate that the mitigation measures adequately address and remediate the adverse impacts so that they will not significantly affect the environment.”⁹³ Thus, agencies are required to provide “a serious and thorough evaluation” of proposed mitigation measures.⁹⁴ “[M]ere perfunctory or conclusory language will not be deemed to constitute an adequate record and cannot serve to support the agency’s” determination that an effect lacks significance.⁹⁵ Here, however, the requirement to come up with a future mitigation plan falls short of these requirements.

The problem is not just that FERC doesn’t have any facts or details with which FERC could plausibly assure *itself* that mitigation would work. The public must also have an opportunity to comment on mitigation. Approving the project now, on the basis of a mitigation plan that has not yet been developed, unlawfully deprives the public of this opportunity. FERC must provide for public comment on the mitigation plan so that the public, and especially impacted environmental justice communities, can weigh in. Absent public comment, the record is incomplete. FERC must also invite comment from the Environmental Protection Agency

⁹² *Cabinet Mountains Wilderness/Scothman’s Peak Grizzly Bears v. Peterson*, 681-82 (D.C. Cir. 1982).

⁹³ *O’Reilly v. U.S. Army Corps of Engineers*, 477 F.3d 225, 234 (5th Cir. 2007); accord *Nat’l Audubon Soc. v. Hoffman*, 132 F.3d 7, 16-17 (2d Cir. 1997).

⁹⁴ *O’Reilly*, 477 F.3d at 231 (internal quotations omitted).

⁹⁵ *Id.*

(“EPA”), the federal agency charged with administering the Clean Air Act.⁹⁶ The condition must contain mandatory and enforceable provisions that actually ensure emissions will be sufficiently reduced. On monitoring, FERC must consult with EPA to determine the appropriate amount and location of ambient air quality monitors. FERC must ensure that there are sufficient monitors to ensure that the air quality in *all* potentially impacted environmental justice communities is below the NAAQS. FERC must also consult EPA to determine appropriate monitoring at the sources of air pollution. FERC could require Rio Grande to have dedicated employees that monitor pollution on site or high definition cameras that can monitor particulate matter emissions. FERC must also ensure the mitigation plan is enforceable. FERC must make the adequate monitoring and mitigation plan part of the Project’s Certificate Order and FERC must require Rio Grande to amend its Title V air permit to include the plan as an enforceable condition in that permit. Finally, as part of the plan, FERC must determine what happens when a NAAQS exceedance occurs. FERC should require immediate cessation of activities and further mitigation measures to reduce emissions.

8. FERC Violated NEPA and the Natural Gas Act By Refusing to Rigorously Explore the Alternative of Mitigating Air Pollution Using CCS

As explained *supra* Part II.B, NextDecade’s plan to build and operate CCS as part of the Rio Grande terminal is a connected action that FERC was required to consider before reapproving the terminal itself. But in the alternative, this plan, and in particular, Rio Grande’s claim that CCS would be feasible and would reduce criteria pollutant emissions, is significant new information

⁹⁶ See 40 C.F.R. § 1501.8(a).

that required FERC to prepare a supplemental EIS.⁹⁷

As we have explained, although FERC has failed to take a hard look or provide a cohesive analysis of impacts on air pollution, including impacts on environmental justice communities, the available information indicates that the projects will have a significant and disproportionately adverse impact, including potential NAAQS exceedances, pollution increases above significant impact levels, and levels of air pollution that cause foreseeable adverse health impacts even if they do not violate Clean Air Act standards.

Given the potential, if not inevitability, of significant impacts here, new information about a feasible way to reduce these impacts is significant, and required a supplemental NEPA analysis. Supplementation is not only required where new information reveals potential additional harms (although CCS has such potential here, with regard to impacts on wetlands, cultural sites, etc.), but also when new information indicates that previously-identified harms can potentially be avoided. For example, in *Alaska Wilderness Recreation and Tourism Association v. Morrison*, 67 F.3d 723 (9th Cir. 1995), the Ninth Circuit explained that where the timber sale contract that was the basis for the description of project need was cancelled, a supplemental analysis was required, because alternatives that had previously been rejected as incapable of supplying that need were now viable. *Id.* at 728-30.

In the record here, Rio Grande asserts that CCS, if implemented, would reduce operational emissions of many criteria pollutants. Information from NETL potentially supports these assertions,⁹⁸ although the NETL analysis does not address how, for Rio Grande, the project

⁹⁷ 40 C.F.R. § 1502.9(d).

⁹⁸ NETL 2019 at 527.

would provide the extra power required for CCS, and thus the impacts thereof. This is enough, however, to trigger an obligation for FERC to rigorously explore this alternative, to find answers to the question of how much CCS would reduce criteria pollution, the extent to which those decreases matter, and the tradeoffs involved therewith. In particular, FERC must take a hard look at CCS possibilities, and consider whether it would be in the public interest to require CCS, even if Rio Grande changes its mind and abandons its stated preference for CCS and its intention to implement it. FERC has authority to require modifications of LNG infrastructure projects to better serve the public interest;⁹⁹ now that Rio Grande has identified CCS as one such possibility, FERC must consider whether to require it.

9. NEPA Required FERC to Publish Its Updated Environmental Justice Analysis in a Supplemental EIS or Other NEPA Document

FERC invited comment on some of the Applicants' responses to FERC Environmental Information Requests.¹⁰⁰ And deficiencies in the Applicants' air modeling were identified in those comments.¹⁰¹ FERC requested new information from the Applicants' in response to those comments.¹⁰² But FERC did not provide for public comment on this new information despite FERC's reliance on that information here.¹⁰³ If FERC utilized the NEPA supplementation process, public comment would have been required.¹⁰⁴

⁹⁹ 15 U.S.C. § 717b(e)(3)(A).

¹⁰⁰ See Remand Order P104 n.238.

¹⁰¹ See Accession 20221021-5070.

¹⁰² See Remand Order P137.

¹⁰³ See *id.* P151 n.330.

¹⁰⁴ 40 C.F.R. § 1503.1(a)(2)(v). To be clear, FERC allowing comment on the Applicants' responses to Environmental Information Requests does not alleviate FERC's obligation to provide its own analysis in the form of an SEIS. FERC must provide impact statements "in plain

Through its updated EJ analysis, FERC also now acknowledges that impacts on environmental justice communities will be “disproportionately high and adverse because they will be predominantly borne by environmental justice communities.”¹⁰⁵ Previously, FERC found the Terminal “would not have disproportionate adverse effects on minority and low-income residents in the area.”¹⁰⁶ This complete reversal of position triggers the need for an SEIS.¹⁰⁷ NEPA requires FERC to take a “hard look” at environmental impacts.¹⁰⁸ Under NEPA, FERC has an “obligation to consider every significant aspect of environmental impact of a proposed action.”¹⁰⁹

Additionally concerning is FERC’s conclusion that 367 new environmental justice communities may be impacted by the Project. These newly identified effected EJ populations are effectively shut out of this process as none were provided the opportunity to intervene into these dockets, protest, or request rehearing. Again, this obvious issue would have been remedied had FERC utilized the NEPA process.¹¹⁰

language” so that the public “can readily understand such statements.” *See* 40 C.F.R. § 1502.8. These statements must be based on FERC’s analysis, supporting data from relevant scientific sources. *Id.*

¹⁰⁵ Remand Order P206.

¹⁰⁶ FEIS at 4-237.

¹⁰⁷ *Native Ecosystems Council v. Tidwell*, 599 F.3d 926, 938 (9th Cir. 2010) (finding an SEIS is required where new information directly contradicts previously published NEPA documents).

¹⁰⁸ *City of Los Angeles, California v. Federal Aviation Administration*, 63 F.4th 835, 841 (9th Cir. 2023).

¹⁰⁹ *Baltimore Gas and Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983). *See also* 40 C.F.R. § 1502.8 (requiring impact statements to be based on “analysis and supporting data from natural and social sciences and the environmental design arts.”).

¹¹⁰ *See* 18 C.F.R. 380.10(a)(1)(i).

FERC's failure to engage impacted communities in its decision making process by publishing an SEIS is made more profound by its finding that the impacts of the project will disproportionately high and adverse for these environmental justice communities. The executive order mandating environmental justice reviews of agency actions specifically calls on federal agencies to conduct their programs in a manner that does not "have the effect of excluding persons (including populations) from participation" in its programs.¹¹¹ FERC itself acknowledges that Environmental Justice is "the fair treatment and meaningful involvement of all people . . . with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies."¹¹² The Commission further cites the EPA in stating that "[m]eaningful involvement . . . means: (1) people have an appropriate opportunity to participate in decisions about a proposed activity that may affect their environment and/or health . . . (3) community concerns will be considered in the decision-making process; and (4) decision makers will seek out and facilitate the involvement of those potentially affected."¹¹³ In addition to its decision to forgo an environmental impact statement,¹¹⁴ FERC has also failed to meet these Environmental Justice

¹¹¹ Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations at 2-2 (Feb. 11, 1994).

¹¹² *Rio Grande Order* at P103 (citing EPA, *Learn About Environmental Justice*, <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice> (Sep. 6, 2022)).

¹¹³ *Id.*

¹¹⁴ As raised by the Clements Dissent, the newly identified impacted EJ communities were not invited or even *provided* an opportunity to participate or intervene in these proceedings. There were no hearings to participate in and the communities were unaware that they should have been submitting comments. The point of the notification process is that it "provides an opportunity for property owners and residents located near a proposed pipeline to express their concerns, including any issue regarding the impact on particular segments of the community." *Horizon Pipeline Co., L.L.C. Nat. Gas Pipeline Co. of Am.*, 96 FERC ¶ 61,053, 61,153 (2001).

mandates by denying community requests for a public meeting and by failing to provide any materials in Spanish.

a) FERC Failed to Provide a Public Meeting

In their comments to responses by the Applicant to FERC's information requests, many community groups requested that FERC hold a public meeting on the Project.¹¹⁵ FERC denied these requests finding "the record is sufficient for [FERC] to address the issues identified by the court."¹¹⁶ Yet, based on this new record, FERC made significant new findings of impact and a public hearing would have provided the impacted public with the opportunity to express opposing technical or scientific view (which can be based on several sources, including the community) from agencies regarding specific impacts and/or methods of analysis," which "may warrant discussion in a NEPA document."¹¹⁷ Public meetings afford impacted EJ communities the opportunity to express whether they "may be differently affected by past, present, or reasonably foreseeable future impacts than the general population."¹¹⁸ Or, whether the effects of the Project on this population would be amplified by "past exposure histories, and social factors."¹¹⁹ The Commission is, in essence, deciding to deny itself the opportunity to be educated and to have the community "help identify the means to identify alternatives and/or mitigate the impacts."¹²⁰ By denying impacted communities' request for a public

¹¹⁵ Remand Order P84.

¹¹⁶ Remand Order P85.

¹¹⁷ Interagency Working Group on Environmental Justice & NEPA Committee, *Promising Practices for EJ Methodologies in NEPA Reviews*, 30 (2016) [*hereinafter* "Promising Practices"].

¹¹⁸ *Id.*

¹¹⁹ *Id.* at 31.

¹²⁰ EPA 1998 Guidance at pdf 54.

meeting, FERC has systemically excluded them from the Commission's decisionmaking.

b) FERC Failed to Provide Information in Spanish

In addition, FERC declined to provide any written materials in Spanish.¹²¹ As FERC recognized, the majority of impacted census block groups are majority Hispanic/Latino.¹²² Many of these communities have limited English proficiency and require translations in order to fully evaluate the impacts of FERC's decisions. For instance, in Port Isabel, the closest city to the Project, a majority of the population speaks Spanish at home and 27.1% speak English less than very well.¹²³ Similarly in Cameron County, 70% of the residents speak Spanish at home and 33.5% of the Spanish speaking population speaks English less than very well.¹²⁴ Even faced with this demographic information,¹²⁵ the Commission has again refused to provide translated documents, effectively excluding a significant portion of the impacted populations from participating in the decisionmaking process contra to mandates by EJ guidance.¹²⁶ This exclusion

¹²¹ Remand Order P85.

¹²² Remand Order P111, 119.

¹²³ U.S. Census Bureau, American Community Surveys: S1601: Language Spoken at Home, Port Isabel, *available at* <https://data.census.gov/table?q=Port+Isabel+city;+Texas,+language&tid=ACST5Y2021.S1601> (last viewed May 7, 2023).

¹²⁴ U.S. Census Bureau, American Community Surveys: S1601: Language Spoken at Home, Cameron County, *available at* <https://data.census.gov/table?q=language+spoken+at+home&g=050XX00US48061>

¹²⁵ This issue was previously raised by commenters. *See* Rebekah Hinojosa August 27, 2020 Comment.

¹²⁶ CEQ Guidance on EJ at 16 (“Agencies should also consider translating documents into languages other than English where appropriate and practical.”); *Promising Practices* at 10 (“Consistent with applicable requirements, agencies should prepare NEPA documents in plain, clear language and provide multiple forms of communication (e.g. written, oral, pictorial) to accommodate varied levels of reading proficiency, to facilitate meaningful engagement, and to

also ignores multiple long-standing executive orders focused on language access and environmental justice.¹²⁷ The inability to effectively participate in FERC's proceedings only amplifies the disproportionately high and adverse impacts of this Project on EJ communities.¹²⁸

10. Deficiencies in FERC's NEPA Analysis Regarding Environmental Justice Also Undermine FERC's Natural Gas Act Conclusion that the Projects Are In The Public Interest

FERC's obligation to consider and disclose impacts to environmental justice communities does not end with NEPA. FERC must also consider these impacts under the Natural Gas Act and issue a certificate "only if a project's public benefits (such as meeting unserved market demand) outweigh its adverse effects (such as a deleterious environmental impact on the surrounding community)."¹²⁹ Yet, FERC does not even attempt to grapple with how approving a new LNG

account for limited English proficiency.")

¹²⁷ For example, EO 13166 issued more than 20 years ago required that each agency develop a language access plan which "shall include the steps the agency will take to ensure that eligible LEP persons can meaningfully access the agency's programs and activities." Exec. Order 13,166, *Improving Access to Services for Persons with Limited English Proficiency* (Aug. 16, 2000). The mandate of that EO was re-emphasized in a memorandum last fall which stated "[a]ll people in this country, regardless of the language they speak, deserve meaningful access to programs and activities that are conducted or supported by federal agencies."¹²⁷ *Memorandum For Heads of Fed. Agencies, Heads of Civil Rts. Off., and Gen. Counsels: Strengthening the Fed. Gov't's Commitment to Language Access*, DEP'T OF JUSTICE (Nov. 21, 2022). In addition, Executive Order 14096 specifically addresses the Environmental Justice concerns presented by failing to provide public information in languages other than English. It states that "Government must continue to remove barriers to the meaningful involvement of the public in such decision-making, particularly those barriers that affect members of communities with environmental justice concerns, including those related to disability, language access, and lack of resources." Exec. Order 14,096, *Revitalizing Our Nation's Commitment to Environmental Justice for All* (April 26, 2023) ("environmental justice can successfully occur only through meaningful engagement and collaboration with underserved and overburdened communities to address the adverse conditions they experience and ensure they do not face additional disproportionate burdens or underinvestment.").

¹²⁸ See *Promising Practices*, 43.

¹²⁹ *City of Oberlin, Ohio v. FERC*, 937 F.3d 599, 602 (D.C. Cir. 2019) ("*City of Oberlin*")

terminal which will have “disproportionately high and adverse” impacts on EJ communities and whose impacts will be “predominately [borne]” by EJ communities is in the public interest.¹³⁰

There is a long history of siting industrial facilities in black, brown, and poor communities in the United States.¹³¹ The very purpose of requiring environmental justice reviews is to try and correct this long-standing practice.¹³² The growing development of natural gas infrastructure is already creating disparity in which populations are subject to the emissions and degradation of the natural environment caused by this industry.¹³³ FERC’s authorization of the Rio Grande project is a continuation of practices by federal and state agencies of creating sacrifice zones in low-income black, brown, and poor communities. FERC unequivocally recognizes that EJ communities will once again be asked to bear the burden of environmental harm for “the greater public good” and chose to completely disregard that perpetuating racist siting of industrial polluters is not in the

(citations omitted).

¹³⁰ Remand Order P207.

¹³¹ See Donaghy, Timothy et. al., *Fossil Fuel Racism in the United States: How Phasing Out Coal, Oil, and Gas Can Protect Communities*, Energy Research & Social Science V. 100 (June 2023).

¹³² See Memorandum for the heads of all departments and agencies: executive order on federal actions to address environmental justice in populations and low-income populations (Feb. 11, 1994) (available at https://www.epa.gov/sites/default/files/2015-02/documents/clinton_memo_12898.pdf) (EO 12898 “is designed to focus Federal attention on the environmental and human health conditions in minority communities and low-income communities with the goal of achieving environmental justice. That order is also intended to promote non-discrimination in Federal programs substantially affecting human health and the environment...”).

¹³³ Donaghy, et at. § 5.2 (“With the shale boom, the U.S. has seen a rapid build-out of oil and gas pipelines, as well as liquified natural gas (LNG) and crude export terminals, which has had the effect of converging significant volumes of oil and gas into regions that are already experiencing environmental justice burdens. These include “Cancer Alley”, Corpus Christi, Houston [175], Port Arthur, and other Gulf South communities.”)

public interest.

D. FERC's Analysis of Greenhouse Gas Emissions Is Arbitrary

In reauthorizing the terminal and pipeline, and in approving the pipeline amendment, FERC failed to reasonably respond to the *Vecinos* remand regarding greenhouse gases, and FERC further acted arbitrarily by ignoring the pending proposal to add CCS to the terminal (whether CCS is viewed as a connected action, significant new information, or both).

1. FERC's Claim that It Cannot Evaluate the Significance of Greenhouse Gas Emissions Is Arbitrary and Unsupported

As the D.C. Circuit affirmed in *Sierra Club v. FERC*, 867 F.3d 1357, 1376 (D.C. Cir. 2017) (“*Sabal Trail*”), the Natural Gas Act provides FERC with the authority and obligation to consider greenhouse gas emissions in making its public interest determinations. NEPA therefore requires FERC to inform those determinations with a hard look at, *inter alia*, the significance and impact of greenhouse gas emissions. *Id.*; accord *Vecinos*, 6 F.4th at 1331.

Here, FERC estimates operation of the Rio Grande LNG terminal will emit about 6,451,324 tons per year of carbon dioxide equivalent (excluding the proposal to implement carbon capture and sequestration).¹³⁴ And operation of the Rio Bravo pipeline result in about 761,655 tons per year of CO₂e.¹³⁵ But FERC refused to provide any analysis of the significance of these emissions, claiming it was impossible to do so. FERC's reasons for rejecting the social cost of carbon or other methods for weighing these impacts were arbitrary. And FERC violated the Natural Gas Act by failing to factor these emissions into FERC's public interest analysis. If

¹³⁴ *Id.* P96.

¹³⁵ *Id.* P97.

FERC's conclusions will not change no matter how many tons of greenhouse gases are emitted, or no matter what level of impact those emissions have, then greenhouse gas emissions do not actually play any role in FERC's decisionmaking. But the Natural Gas Act and NEPA do not permit FERC to ignore this issue.

a) FERC's Refusal to Use Social Cost Remains Arbitrary Where FERC Also Fails to Provide Any Alternative Analysis

As *Vecinos* explained, NEPA and the Natural Gas Act do not permit FERC to throw up its hands, or to hold out for a perfect methodology. Where, as here, FERC claims that it is missing information relevant to reasonably foreseeable adverse impacts, NEPA requires FERC to, *inter alia*, evaluate impacts “based upon theoretical approaches or research methods generally accepted in the scientific community.” *Id.* at 1328 (quoting 40 C.F.R. § 1502.21(c)(4)); *accord Mont. Wilderness Ass’n v. McAllister*, 666 F.3d 549, 559 (9th Cir. 2011) (when confronted with a difficult problem, “the proper response to that problem is for [the agency] to do the best it can with the data it has, not to ignore the [issue] completely.”). Thus, the issue isn’t whether *FERC* thinks the tool is acceptable, but whether the broader scientific community does. *Vecinos*, 6 F.4th at 1329.

Here, FERC does not dispute that the social cost of carbon protocol is “generally accepted in the scientific community,” nor could it. FERC has previously admitted the same. *Fla. Se. Connection, LLC Transcon. Gas Pipe Line Co., LLC Sabal Trail Transmission, LLC*, 164 FERC ¶ 61,099, P10 (2018). And here, FERC calculated the social cost of the projects’ emissions (excluding upstream and downstream emissions associated with gas production and use), using the range of discount rates recommended by the Interagency Working Group. Remand Order PP98-99. But FERC refused to use these estimates to make a determination of whether the

pipeline's foreseeable greenhouse gas emissions were significant or, apparently, to factor these estimates into FERC's evaluation of whether the project's benefits outweighed its harms. Remand Order PP93, 100. Instead, FERC stated it that it was providing these estimates for "informational purposes," *id.* P94, but not, apparently, to inform FERC's own decisionmaking.

The reasons FERC gives here for refusing to consider social cost in FERC's own decisionmaking are arbitrary. FERC repeats its argument that social cost of carbon may be appropriate for "rulemaking," but FERC asserts that it is unsuitable for project-level NEPA review. Remand Order P93. FERC provides no explanation as to why the impact of two million tons of greenhouse gases emitted by an individual project differs from the impact of two million tons emitted as a result of a regulation. Elsewhere, FERC has asserted that in rulemaking, the choice of discount rate is less important, because the same discount rate can be consistently applied throughout a cost-benefit analysis.¹³⁶ But FERC is simply mistaken in suggesting that uniform application of a discount rate means that the choice of which rate to use is less important. *Nat. Res. Def. Council, Inc. v. Herrington*, 768 F.2d 1355, 1414 (D.C. Cir. 1985) (in reviewing energy efficiency standards, choice between 5%, 7%, or 10% discount rate "substantially" changed conclusion of regulations' benefits). More broadly, FERC has never provided any non-arbitrary explanation as to *why* or *how* project-level proceedings differ from rulemakings in ways that make social cost of carbon appropriate for the latter but not the former. And while CEQ is working "to review, revise, and update its 2016" GHG guidance, CEQ has encouraged agencies to

¹³⁶ *But see Mountain Valley Pipeline, LLC Equitrans, L.P.*, 163 FERC ¶ 61,197 P281 n.772 (2018) (recognizing that BOEM, OSM, DOE, and numerous state agencies have used social cost of carbon in environmental review of individual projects). In that order, FERC suggested that greenhouse gas emissions were primarily a problem for agencies that regulate production or use of fossil fuels. But the direct emissions at issue here are exactly that: emissions that result from use of fossil fuels in a FERC-jurisdictional project.

comply with the 2016 guidance pending revision.¹³⁷ The 2016 GHG Guidance identifies social cost of carbon as “a harmonized, interagency metric that can give decision makers and the public useful information *for their NEPA review*.”¹³⁸ FERC has not identified any CEQ statement stating that social cost of GHGs is, or may be, inappropriate for project-specific review.

FERC’s only other criticism of the social cost of carbon here is that “there are no criteria to identify what monetized values are significant for NEPA purposes, and we are currently unable to identify any such appropriate criteria.” Remand Order P93. But there are few, if any, bright-line criteria for determining significance for *any* types of environmental impacts, and NEPA requires agencies to make informed judgments on these impacts as well. *See Mont. Wilderness Ass’n*, 666 F.3d at 559. And although it may be hard to know whether certain monetized costs are worth worrying about in other cases, here, where FERC estimates social cost of greenhouse gases directly emitted as a result of the Rio Grande LNG and Rio Bravo projects at \$6.6 *billion* in the center case, Remand Order PP98-99, these emissions are plainly not something that can be shrugged off or assumed not to weigh in the public interest calculus.

FERC misleadingly argues that it is justified in refusing to use the social cost of carbon in its own decisionmaking because courts have affirmed FERC’s rejection of the tool in the past. Remand Order P93. As *Vecinos* explained, prior decisions did not consider FERC’s obligations under 40 C.F.R. § 1502.21 (or its prior codification at 40 C.F.R. § 1502.22 (2019)). *Vecinos*, 6 F.4th at 1329 (distinguishing *EarthReports, Inc. v. FERC*, 828 F.3d 949, 956 (D.C. Cir. 2016)); *see Delaware Riverkeeper Network v. FERC*, 45 F.4th 104, 112 (D.C. Cir. 2022) (holding that

¹³⁷ See Accession No. 20210527-5009.

¹³⁸ https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf at 33 n.86.

petitioners there had failed to exhaust the argument that prevailed in *Vecinos*). The law is clear: where FERC refuses to analyze the significance of greenhouse gases with any other method, and where FERC fails to provide a rational explanation as to why the social cost of greenhouse gases is not a generally accepted as a suitable tool for this task, then FERC must use that tool here.

b) Alternatively, FERC Could Apply Its Draft Greenhouse Gas Guidance

The Remand Order also represents an about-face from FERC's 2022 practice. Instead of applying the social cost of carbon, last year, FERC published a proposed policy statement on Consideration of Greenhouse Gas Emissions in Natural Gas Infrastructure Project Reviews, 178 FERC ¶ 61,108. That interim, now draft, policy identified a different way to evaluate the significance of project greenhouse gas emissions: a simple 100,000 tons per year threshold. *Id.* P79. For projects exceeding this threshold, FERC would not categorically rule that greenhouse gas emissions rendered the project contrary to the public interest, but these "significant" emissions would need to be factored into FERC's public interest analysis. Notably, for pipelines approved under section 7 of the Natural Gas Act, the policy asks whether all foreseeable lifecycle emissions would exceed this threshold. *Id.* In orders issued after publication of this draft, FERC did not dispute that it was possible to evaluate the significance of greenhouse gas emissions, but FERC stated that it would not do so until this policy was finalized.

Although, as FERC notes here, this draft policy has been "suspended," Remand Order P101, that does not mean that FERC could not use the same principles articulated therein to make an ad-hoc determination for this project. Such an ad hoc evaluation might not be ideal, but the law does not permit FERC to refuse to consider issues simply because FERC would prefer to figure out a way to do so later. Even the *direct* operational emissions here, exceed 7 million tons of

carbon dioxide equivalent per year,¹³⁹ more than seventy times greater than the significance threshold for *lifecycle* emissions proposed in the interim, now draft, policy. While FERC is considering how to use this proposal in general, or while considering an alternate proposal, that does not justify refusing to make the decisions required by NEPA and the Natural Gas Act here. FERC can choose how it approaches this problem—FERC can make a case-specific significance determination here, or FERC can wait until it is comfortable applying the general policy and *then* do so here—but FERC can’t approve now and analyze (for other projects) later.

c) Comparisons with State and National Emission Totals Would Not a Substitute for Determining Significance

Finally, FERC cannot meet its NEPA and Natural Gas Act obligations simply by comparing direct project emissions with emissions of the United States or Texas as a whole.. Observing that emissions here are a small portion of regional or national totals does not illustrate their impact. *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008). Even a “very small portion” of a “gargantuan source of ... pollution” may “constitute[] a gargantuan source of ... pollution on its own terms.” *Sw. Elec. Power Co. v. EPA*, 920 F.3d 999, 1032 (5th Cir. 2019).

2. FERC Violated NEPA and the Natural Gas Act By Refusing to Rigorously Explore the Alternative of Mitigating Greenhouse Gas Emissions Using CCS

As explained *supra* parts II.B and II.C.8, NEPA and the Natural Gas Act also required FERC to take a hard look at the proposal to add CCS to the Rio Grande terminal. FERC must evaluate NextDecade’s plans to do so, and FERC itself must rigorously explore whether to require

¹³⁹ Remand Order PP96-97.

CCS, pursuant to FERC's authority under 15 U.S.C. § 717b(e)(3)(A).

The primary purpose of CCS is, of course, to reduce greenhouse gas emissions. If CCS performs as Rio Grande asserts that it will, it would avoid billions of dollars in climate harm annually. While this is a small fraction of the total climate harm the exports would cause (because the direct emissions constitute only a small fraction of total lifecycle emissions), the potential to avoid billions of dollars of harm is, plainly, an important part of the problem. Because new information about Rio Grande's plans and its determination regarding the feasibility of CCS demonstrates that an alternative not previously considered is now feasible (and actually planned), NEPA required FERC to supplement the prior EIS. FERC's decision to reauthorize the projects without NEPA analysis of this alternative, or without considering whether to require it pursuant to FERC's Natural Gas Act authority, was arbitrary.

E. The Rio Bravo Amendment

1. FERC Must Supplement the NEPA Analysis for the Pipeline to Account for New Information about Upstream Effects

While FERC has quantified the impacts of the Project's direct greenhouse emissions, *i.e.* the greenhouse gas emissions from the project infrastructure itself, FERC has not considered greenhouse gas emissions outside the Project's direct emissions. This means that FERC has failed to consider the vast majority of emissions associated with the Project. The Department of Energy has estimated that liquefaction accounts for only 6% of the lifecycle greenhouse gas emissions of U.S. LNG exports.¹⁴⁰ And this estimate overestimates liquefaction's share, because DOE

¹⁴⁰ National Energy Technology Laboratory, Life Cycle Greenhouse Gas Perspective on Exporting Liquefied natural Gas from the United States: 2019 Update, at 23 (Sept. 12, 2019), *available at* <https://www.energy.gov/sites/prod/files/2019/09/f66/2019%20NETL%20LCA-GHG%20Report.pdf>.

underestimates non-liquefaction emissions.¹⁴¹ Here, in Docket CP22-17, Rio Grande explains that it will liquefy gas produced “in the Permian Basin and Eagle Ford Shale.”¹⁴² Recent research demonstrates that Permian Basin gas production emits far more methane than assumed in DOE’s analysis.¹⁴³

When assessing a project’s environmental impacts, FERC is required to consider indirect effects. *See* 40 C.F.R. § 1508.1(g)(2). This means that FERC has to assess effects that are “reasonably foreseeable” provided “they are sufficiently likely to occur such that a person of ordinary prudence would take them into account in reaching a decision.”¹⁴⁴ Where FERC has sufficient information to determine the source of natural gas that will eventually be liquefied for export, it must assess the impacts of greenhouse gas emissions from the source.¹⁴⁵

Because Rio Grande acknowledged that it would be sourcing feedgas from the Permian Basin and the Eagle Ford Shale, FERC has enough information to analyze the upstream impacts associated with the Project. Additionally, FERC has a sufficient scientific basis for assessing these impacts.¹⁴⁶ As above, this is significant new information. And because Rio Grande’s information on the source of the gas post-dates FERC’s EIS, FERC has not yet performed this necessary

¹⁴¹ *See* Sierra Club, Comment on Life Cycle Update, at 6-9 (Oct. 21, 2019), *available at* <https://fossil.energy.gov/app/DocketIndex/docket/DownloadFile/604>.

¹⁴² Rio Grande, Application in CP22-17, at 9 (Accession 20211117-5060).

¹⁴³ *E.g.*, Yuzhong Zhang *et al.*, *Quantifying methane emissions from the largest oil-producing basin in the United States from space*, Science Advances (Apr. 22, 2020), DOI: 10.1126/sciadv.aaz5120 (estimating a methane “leak rate” in the Permian of 3.5 to 3.7%), *available at* <https://advances.sciencemag.org/content/6/17/eaaz5120/tab-pdf>.

¹⁴⁴ *Sabal Trail*, 867 F.3d at 1371 (quoting *EarthReports, Inc. v. FERC*, 828 F.3d 949, 955 (D.C. Cir. 2016) (internal quotations omitted).

¹⁴⁵ *Sierra Club v. FERC*, 827 F.3d 36, 47 (D.C. Cir. 2016) (“*Freeport*”).

¹⁴⁶ *See supra* notes 137 and 138.

analysis and FERC must supplement to do so. At the very least FERC must assess this new information and determine its significance.

2. FERC Must Consider New Information Concerning the Valley Crossing Alternative

On June 16, 2020, Rio Bravo applied to amend its authorization for the Pipeline System.¹⁴⁷ Rio Bravo sought:

a reduction in the total number of compressor stations, the elimination of certain measurement facilities, a change to the maximum allowable operating pressure of the pipelines and header system, and an increase in the diameter of the first pipeline from 42 inches to 48 inches, resulting in an increase in the mainline design capacity on the first pipeline from 2.25 Bcf/d to 2.6 Bcf/d.¹⁴⁸

These changes were in response to numerous comments that the initially approved Pipeline System had environmental impacts that were unnecessary and unjustified.¹⁴⁹ For example, as initially approved, the Pipeline System included a compressor station sited in wetlands.¹⁵⁰ Despite these comments, FERC wrongly approved the Project with the unnecessary environmental impacts. After a round of litigation, both concerning the Project's Clean Water Act section 404 permit and FERC's initial authorization of the Project, Rio Bravo implicitly acknowledged that those commenters were correct – the Project could be redesigned to avoid certain environmental impacts.

¹⁴⁷ See Accession 20200616-5023.

¹⁴⁸ *Id.* at 1.

¹⁴⁹ See Accession 20200716-5148, at 1 (collecting citations to such comments).

¹⁵⁰ Final EIS at 4-61.

History is now repeating itself. On December 21, 2020, FERC issued an Environmental Assessment analyzing the environmental impacts of the proposed amendment.¹⁵¹ In that Environmental Assessment, FERC briefly addressed a system alternative to the proposed pipeline—the Valley Crossing Alternative.¹⁵² This alternative would have used the existing Valley Crossing pipeline to supply some of the gas to the Rio Grande terminal, obviating the need for one of the Rio Bravo pipelines.¹⁵³ But FERC rejected that alternative because, it claimed, that “the Valley Crossing Pipeline’s volume is fully subscribed by end users in Mexico.”¹⁵⁴ FERC did not address whether the Valley Crossing Pipeline could be altered to increase capacity and whether that increased capacity could be used to supply gas to the Project. But FERC’s approval of the nearby Annova project stated that “Annova LNG Brownsville will receive ... up to 1.2 billion cubic feet ... per day of natural gas from the existing intrastate system of Valley Crossing Pipeline, LLC.”¹⁵⁵ Annova planned to expand the Valley Crossing pipeline to accommodate the 1.2 bcf/d capacity.¹⁵⁶ On March 22, 2021, Annova announced the cancellation of the Annova LNG project. On March 25, 2021, commenters brought the Annova cancellation to FERC’s attention and explained that FERC needed to supplement its EIS for the Project to analyze whether the planned Valley Crossing expansion could be used to supply gas for the Project.¹⁵⁷

¹⁵¹ See Accession 20201221-3012.

¹⁵² *Id.* at 48-49.

¹⁵³ Accession 20210325-5248, at 2.

¹⁵⁴ *Id.* at 49.

¹⁵⁵ *Annova Common Infrastructure, LLC*, 169 FERC ¶ 61,132, P9 (Nov. 22, 2019).

¹⁵⁶ Annova FEIS at 1-15, Accession 20190419-3027 (summarizing Annova Response to Information Request, Accession 20190325-5179).

¹⁵⁷ Accession 20210325-5248.

FERC has now wrongly approved Rio Bravo's amendment application without supplementing its NEPA analysis to assess the valley Crossing Alternative.

At the threshold, Valley Crossing is a feasible alternative to Rio Bravo's proposed pipeline system. Like the Rio Bravo pipeline system Valley Crossing originates at the Agua Dulce hub and passes directly through the Rio Grande terminal site.¹⁵⁸ Indeed, Rio Grande terminal already plans to receive commissioning gas from Valley Crossing. FERC's previous approval of Annova's plan to add capacity to Valley Crossing indicates that the applicants here can undertake the same project. Such a project may be even more workable here as Rio Bravo and Valley Crossing share a parent company—Enbridge. And if Rio Bravo transported 1.2 bcf/d of gas via Valley Crossing, Rio Bravo would plainly be able to eliminate one of the pipelines it proposes to build. If that were the case, the Rio Bravo system would only need to deliver 3.3 bcf/d of gas. This volume could easily be delivered by a single pipeline. As FERC is aware, it has approved a 42-inch pipeline capable of delivering almost 4.0 bcf/d.¹⁵⁹ Finally, Valley Crossing would provide the kind of service Rio Grande claims to need—Annova had signed a 20-year agreement for “firm transportation service.”¹⁶⁰

The new information concerning the cancellation of the Annova project and the

¹⁵⁸ Final EIS at 3-13; *see also id.* at 3-14 (maps of Rio Bravo and Valley Crossing routes), 2-26 – 2-27 (Rio Bravo would directly adjoin the Valley Crossing Pipeline for 42.3 miles).

¹⁵⁹ *Alaska Gasline Development Corp.*, 171 FERC ¶ 61,134, P4 (2020).

¹⁶⁰ Annova LNG and Enbridge Sign Pipeline Agreement (Jan. 22, 2020), *available at* <https://annovalng.com/annova-lng-and-enbridge-sign-pipeline-agreement/> (Accession 20210325-5248). *See also* Enbridge Inc. Reports Strong Fourth Quarter and Full Year 2019 Results (Feb. 14, 2020), *available at* <https://www.sec.gov/Archives/edgar/data/895728/000089572820000008/ei1231198-kenr991.htm> (Accession 20210325-5248).

availability of 1.2 bcf/d of uncontracted for capacity on the Valley Crossing pipeline triggers NEPA's supplementation requirement. The information is significant because it concerns an alternative that would reduce the Project's environmental impacts. As described above, where new information allows for consideration of a potential environmentally beneficial alternative, supplementation is required. Also, as described above, FERC retained sufficient authority to weigh the benefits against the environmental costs.

While FERC's explanation for rejecting the alternative in the Remand Order is not a substitute for supplementing its EIS, it is also substantively baseless. According to FERC:

There is no evidence that, given the cancellation of the Annova Project, there has been any expansion of that system resulting in available firm capacity. Thus, as explained in the EA, any transportation service that could be obtained on the Valley Crossing Pipeline would be on an interruptible basis only. Additionally, there is no evidence that Valley Crossing Pipeline, LLC, an entity not subject to our jurisdiction, is either willing or able to modify its facilities in a way that would create enough firm capacity to eliminate the need for Rio Bravo's Pipeline 2. Therefore, we agree with the EA's conclusion that the Valley Crossing Pipeline is not a feasible alternative to the Amendment Project.¹⁶¹

This is arbitrary. FERC guidance explains:

System alternatives are those that would meet the objectives of the project, but would use a different (and often existing) natural gas facility/pipeline system or a different configuration of facilities that would eliminate the need to construct all or part of the project. If modifications or additions to the existing facilities/systems would be required to meet the project objectives, you should quantify the environmental impact of the modification for comparison with those of the proposed project....

System alternatives should include alternative configurations both on your own system and on one or more other companies' facilities....

¹⁶¹ Remand Order P72.

Examples of Alternatives using other companies' facilities[] should include an examination of current capacities of existing systems, to the extent this information is available, and an assessment of these systems' ability to individually or in combination meet the objectives of the proposed project. If the existing systems are inadequate, you should examine whether any recently proposed facilities are able to individually or in combination meet the objectives of the proposed project. If these recently proposed facility are also inadequate, you should examine what new facilities one or more companies would likely need to construct to achieve the objectives of the proposed project.¹⁶²

This is exactly what FERC needs to do here to ensure it takes a hard look at alternatives. Notably, FERC is explicitly instructed to assess new construction by third parties. But here FERC essentially rests on the assumption that Valley Crossing, as currently constituted, could not supply the needed gas to Rio Grande on a firm basis. This approach is arbitrary. FERC need only ask Rio Bravo to inquire whether a company owned by the same parent company as it can expand. FERC has not done so and has not explained why it has not done so.

FERC also *still* hasn't established that Valley Crossing can't provide the needed gas without any modifications. In a 2020 scoping comment, commenters explained that 1.5 bcf/d of capacity on Valley Crossing has been used.¹⁶³ Proprietary data provided by PointLogic,¹⁶⁴ which FERC can and must ask Rio Bravo and its Enbridge to confirm, indicates that Valley Crossing's weekly utilization only exceeded 33% once in the time since that scoping comment was filed, only rising to 36% in that week. It appears that in actual practice, Valley Crossing has never had

¹⁶² FERC, Guidance Manual for Environmental Report Preparation, at 4-136 (Feb. 2017), available at <https://www.ferc.gov/sites/default/files/2020-04/guidance-manual-volume-1.pdf>.

¹⁶³ Accession 20200828-5242, at 3.

¹⁶⁴ <https://ihsmarket.com/products/pointlogic-gas.html>.

less than 1.6 bcf/d available capacity. Thus, even if Valley Crossing's capacity is contracted-for, those contract holders may be willing, or even eager, to relinquish those contracts, which would be environmentally preferable to constructing additional pipeline capacity.

To be clear, the Valley Crossing alternative may have adverse environmental consequences. To add capacity to the Valley Crossing pipeline, compression would likely need to be added. Compressor stations, of course, emit air pollution in addition to having other consequences. These consequences need to be studied as part of the NEPA process.

In sum, FERC must supplement its EIS to properly assess the Valley Crossing Alternative. FERC must analyze whether the cancellation of the Annova project would allow Rio Bravo to utilize the capacity that Annova planned to use. FERC must also analyze whether Rio Bravo could use the Valley Crossing pipeline absent modifications. At the very least, FERC must satisfy its duty to assess and determine the significance of the new information concerning the Valley Crossing Alternative, *i.e.*, both the Annova cancellation and the information that Valley Crossing's existing capacity is underutilized.

F. FERC must supplement its EIS based on new information concerning launch failures at the SpaceX Boca Chica site.

In issuing the Remand Order, FERC ignored multiple issues that require FERC to supplement the Environmental Impact Statement initially issued to review the Project and relied on extensively in the Remand Order.

NEPA imposes a continuing obligation to "supplement" and reconsider prior findings even after the initial analysis is prepared and the agency has taken initial action, when "significant

new circumstances or information “are presented.”¹⁶⁵ This duty persists so long as there is “remaining government action [that] would be environmentally significant” and the agency retains “a meaningful opportunity to weigh the benefits of the project versus the detrimental effects on the environment.”¹⁶⁶ “When new information comes to light the agency must consider it, evaluate it, and make a reasoned determination whether it is of such significance as to require implementation of formal NEPA filing procedures.”¹⁶⁷

In the FEIS, FERC analyzed the impacts for Falcon 9 and Falcon Heavy launch vehicles.¹⁶⁸ FERC found that launch failures of these vehicles could result in cascading damage, but did not disclose what the cascading damage may be or how launch failures could have such a result.¹⁶⁹ Instead, FERC concluded that Rio Grande LNG need only develop response procedures should a launch failure occur based, in part, on FAA guidance regarding SpaceX launches.¹⁷⁰ FERC’s analysis did not account for “conceptual launch vehicles that may launch from the SpaceX launch facility such as the Big Falcon Rocket.”¹⁷¹

Since the release of the FEIS, the FAA has published written re-evaluations and addendums for SpaceX’s EIS in August 2019, November 2019, June 2020, May 2020, and

¹⁶⁵ 40 C.F.R. § 1502.9(d)(1).

¹⁶⁶ *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 372 (1989).

¹⁶⁷ *People Against Nuclear Energy v. U.S. Nuclear Regul. Comm’n*, 678 F.2d 222, 234 (D.C. Cir. 1982), *rev’d on other grounds sub nom. Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766 (1983) (quotation omitted).

¹⁶⁸ FEIS at 4-357.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.* at 4-358, 4-366, 3-376.

¹⁷¹ *Id.* at 4-357.

December 2020, a Final Programmatic Environmental Assessment (“PEA”) in June 2022 for the SpaceX’s Starship Super Heavy,¹⁷² the largest rocket every built,¹⁷³ and a written re-evaluation of the 2022 Final PEA in April 2023.¹⁷⁴ SpaceX is conducting an expanded suite of tests, is launching larger rockets more frequently than anticipated in 2019, and has plans to continue doing so. According the PEA, debris from launches was “expected to be contained within the debris study area, which is a 700-acre area within the ‘all hard checkpoint’” immediately surrounding the launch site.¹⁷⁵ The PEA also identified impacts to historic properties,¹⁷⁶ essential fish habitat,¹⁷⁷ and federally protected species.¹⁷⁸ Launches from the site will also contribute to degradation of local air quality.¹⁷⁹

Following the FAA’s PEA and program approval, SpaceX began test launching the Starship vehicles. Between 2020 and 2021, four of five launches ended in explosions and the fifth still ended in a fire.¹⁸⁰ One of those launches in March of 2021 resulted in debris landing as far as

¹⁷² https://www.faa.gov/space/stakeholder_engagement/spacex_starship. This is the current construction of the “Big Falcon” referenced in the FEIS.

¹⁷³ <https://www.nasaspacesflight.com/2020/10/the-continued-evolution-of-the-big-falcon-rocket/>.

¹⁷⁴ <https://time.com/6252046/spacex-starship-rocket/>.

¹⁷⁵ https://www.faa.gov/space/stakeholder_engagement/spacex_starship

¹⁷⁶ FAA PEA 98.

¹⁷⁷ FAA PEA S-18, ES-20, ES-22.

¹⁷⁸ FAA PEA S-25

¹⁷⁹ FAA PEA S-25-26; The April 2023 reassessment affirmed the conclusions of the original PEA.

¹⁸⁰ FAA PEA - 50

¹⁸⁰ <https://time.com/6252046/spacex-starship-rocket/>.

5 miles from the launch site.¹⁸¹ More recently, on April 20, 2023, the test launch of the Starship Super Heavy resulted in an explosion and a 25-foot crater at the launch site.¹⁸² As a result, parts of Port Isabel, several miles away from the FAA’s predicted zone of impact,¹⁸³ were coated in dust and wet particulate.¹⁸⁴ Dispersion of particulate matter as far as six-miles from the launch site was not an FAA considered or predicted impact from the Starship program.¹⁸⁵ Residents have also reported their homes shaking during past launches. According to residents, this shaking was more pronounced during the April 20th launch, and at least one person has reported a broken window as a result of the launch’s impacts.¹⁸⁶

Despite the FAA categorizing explosions of this nature “anomalies”¹⁸⁷, ongoing explosions at the SpaceX launch site in Boca Chica should be expected given the SpaceX ethos of learning from failure and disregard for launch impacts.¹⁸⁸ Multiple news outlets have reported that SpaceX’s progress is the result of taking significant risks to learn from their mistakes.¹⁸⁹

¹⁸¹ See CBD v. FAA suit, P 65.

¹⁸² <https://www.nytimes.com/2023/04/21/us/spacex-rocket-dust-texas.html>

¹⁸³ FAA PEA – 700 acres.

¹⁸⁴ <https://www.nytimes.com/2023/04/21/us/spacex-rocket-dust-texas.html>

¹⁸⁵ FAA PEA

¹⁸⁶ <https://www.nytimes.com/2023/04/21/us/spacex-rocket-dust-texas.html>

¹⁸⁷ FAA PEA – 29 “A Starship/Super Heavy test operation or launch could result in a deviation from what is expected (referred to as an anomaly). An anomaly on the launch pad could cause fire on the launch pad and/or an explosion that spreads debris.” The PEA goes on to say that such anomalies are “unexpected.”

¹⁸⁸ See e.g. Tweet from Elon Musk, Apr. 20, 2023 (Following the explosion that left a 25-ft crater in Boca Chica “Congrats @SpaceX team on an exciting test launch of Starship! Learned a lot for next test launch in a few months.”) Available at: <https://twitter.com/elonmusk/status/1649050306943266819>

¹⁸⁹ <https://www.theverge.com/2023/4/26/23699365/spacex-starship-damage-launch-pad-debris> (“SpaceX’s high tolerance of risk is what has enabled the company to make such impressive

However, SpaceX's apathetic approach towards risk also results in a blind eye for safety concerns known to the company prior to launches. For instance, in December 2020, SpaceX ignored FAA's determination that a starship launch would violate the company's launch license. That launch ended in an explosion at the rocket's landing.¹⁹⁰ Although no individuals or homes were impacted, the FAA's concern was that impacts from an in-air explosion would extend to people's homes.¹⁹¹ SpaceX launched its prototype anyway. Similarly, SpaceX knew that a steel plate would prevent the launch pad from disintegrating during the April 20, 2023 launch but chose to proceed with the launch even though the plate was not ready.¹⁹²

It appears that the frequency of explosions at the SpaceX launch site has resulted in more significant environmental impacts than FERC's FEIES or the FAA's PEA disclosed. Relatedly, the FAA has now been sued by several organizations for its failure to evaluate the true impacts of the program, including frequency of lost access to public spaces used by both indigenous tribes and the public at large,¹⁹³ increased wildlife mortality,¹⁹⁴ damage to essential wildlife habitat,¹⁹⁵

strides forward in areas like reusable rockets"); <https://www.space.com/every-spacex-starship-explosion-lessons-learned> (discussing that SpaceX's prototype spacecraft has been a risky and explosive process "simply because Starship is a new system trying to do unusual things.")

¹⁹⁰ <https://www.theverge.com/2021/6/15/22352366/elon-musk-spacex-faa-warnings-starship-sn8-launch-violation-texas>

¹⁹¹ *Id.*

¹⁹² <https://twitter.com/elonmusk/status/1649523985837686784>; <https://www.theverge.com/2023/4/26/23699365/spacex-starship-damage-launch-pad-debris>

¹⁹³ *CBD v. FAA*, petition 72-23.

¹⁹⁴ *Id.* at 69. This includes the same migratory birds impacted by the construction and operation of the Project.

¹⁹⁵ *Id.* 66-68.

including losses from fires which release PM_{2.5}¹⁹⁶ a criteria pollutant that is already near the NAAQS in the local area,¹⁹⁷ as well as increased activities and explosive “anomalies” than predicted by the PEA or authorized.¹⁹⁸

FERC’s previous analysis of safety and cumulative impacts based on the proximity of the Terminal to the SpaceX launch site and current environmental conditions 46 and 131 that Rio Grande LNG must develop response procedures for SpaceX launches is insufficient. Experientially, SpaceX has demonstrated a disregard of FAA safety guidance. Its program has also demonstrated that launches can have impacts far outside FAA’s impact zone. FERC must supplement its initial environmental analysis to evaluate the potential for cascading impacts from future failed launches of the Starship Super Heavy, including particulate matter potentially distributed by future launches that may coat the terminal and vibrations that are strong enough to shatter glass several miles away.¹⁹⁹ The radius of particulate matter extended as far away as 7 miles encompassing the Rio Grande site.²⁰⁰ FERC should also evaluate the cumulative impacts of

¹⁹⁶ [https://www.epa.gov/wildfire-smoke-course/why-wildfire-smoke-health-concern#:~:text=Fine%20particles%20\(also%20known%20as,are%20of%20greatest%20health%20concern.](https://www.epa.gov/wildfire-smoke-course/why-wildfire-smoke-health-concern#:~:text=Fine%20particles%20(also%20known%20as,are%20of%20greatest%20health%20concern.)

¹⁹⁷ See *infra* § II(C)(5).

¹⁹⁸ *Id.* at 63.

¹⁹⁹ See *Wild Virginia v. United State Forest Service*, 24 F.4th 915, 927-29 (4th Cir. 2022) (Finding NEPA violation when Forest Service and BLM violated NEPA when they failed to consider real-world data which indicated modeled impacts were unreasonable and inconsistent with actual impacts.)

²⁰⁰ In a May 4th response to requests for environmental information, Rio Grande LNG disclosed that no debris from the launch was found at the terminal site. FERC Data Request 27-Apr-2023 – Responses. That no debris was found at the site does not preclude the potential of impacts from vibrations or the dispersed particulate matter had the site been operational at the time of the failure.

SpaceX's launches, launch failures, and the simultaneous operation of Rio Grande LNG on the environmental justice communities located in the vicinity of the terminal and the SpaceX launch site. Finally, FERC should reconsider whether it is in the public interest to have an export terminal, pipeline, and tankers for volatile and combustible liquids so close to a site where rocket launches and landings are repeatedly resulting in explosions and fires.

III. Conclusion

For the reasons stated above, Sierra Club hereby requests rehearing of the Remand Order and that FERC rescind the certificate order.

Respectfully submitted May 22, 2023

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CERTIFICATE OF SERVICE

I hereby certify that I have this day caused the foregoing document to be served upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Oakland, CA May 22, 2023.



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